DEQ Nutrient Work Group
1st Meeting Summary
May 11, 2009

Agenda
- Welcome and Introductions
- NWG Ground Rules
- Numerical Nutrient Standards
- NWG Work Plan
- Future Meeting Schedule

Welcome and Introductions
Nutrient Work Group Genesis - George Mathieus opened the meeting, welcomed its participants, and discussed the genesis of the Nutrient Work Group (NWG). The Montana Department of Environmental Quality (DEQ) began work on nutrient standards in 2000. Because DEQ expected implementation of the standards to be difficult, it convened a committee of stakeholders to advise it on criteria for a temporary variance or off-ramp from the standards based on affordability. Beginning in September 2008, this group met six times and developed recommendations for affordability criteria for public entities. It also began, but did not finish, discussions about criteria for private entities. In the mean time, DEQ decided to seek clear authority from the Montana legislature to deviate from numeric nutrient standards. In its recently completed session, the legislature passed and the governor signed into law SB95 which authorized DEQ to establish criteria for temporary permits based on a determination that the base numeric nutrient standards cannot be achieved by a particular point source discharger due to economic impacts or the limits of technology. SB95 also directed DEQ to convene the NWG and to appoint to it representatives of publicly owned and privately owned point sources of pollution, non-point sources of pollution, and other interested parties to "...advise the department on the base numeric nutrient standards, the development of temporary nutrient criteria, and the implementation of those standards and criteria together with associated economic impacts."

NWG Members and Alternates - The initial list of members and alternates of the NWG designated by the DEQ is attached below as Appendix 1. This list was based on advice from the previous affordability advisory group and suggestions from point dischargers.

Comment - DEQ may wish to consider appointing to NWG a representative of utilities.

A list of the members, alternates, and others in attendance at this meeting is attached below as Appendix 2. DEQ has retained Gerald Mueller to act as the facilitator for NWG. He played a similar role for the previous affordability advisory group.

NWG Ground Rules
Gerald Mueller lead a discussion of the rules that would guide the operation of the NWG using the draft ground rules contained below in Appendix 3. After a discussion, those NWG members and alternates present at this meeting agreed to the May 11 draft with the following changes:
- The purpose statement should be revised to read: "The purpose of the NWG is to develop recommendations to the DEQ for the base numeric nutrient standards, the development of

temporary nutrient criteria, and the implementation of those standards and criteria together with associated economic impacts."

- The NWG is expected to function through May 2010 and may be extended.
- Members of the NWG may designate an alternative if they have not already done so. The alternates will be included in the list of members.
- The provision addressing the decision rule should include a statement that DEQ will draft a report documenting the NWG recommendations, including majority and minority views, if any.
- Each meeting agenda should include a designated period to receive public comment at the end of the meeting.
- Non-NWG members should have a reasonable opportunity to address the group if they notify the facilitator prior to a meeting.
- Except during the designated public comment period, the facilitator may limit questions, comments, and discussion during an NWG meeting to members of the NWG or their alternates.
- NWG may create committees to consider specific designated topic; committees will report on their deliberations to the NWG.
- The ground rules should address news media contacts. While members can respond to media contacts with their own views, only DEQ should speak on behalf of the NWG. Members should not discuss the views of other members with the media or in other forums.

Mr. Mueller will revise the May 11 draft and the NWG will consider the revision at its next meeting.

Numerical Nutrient Standards

Dr. Mike Suplee provided an overview of the DEQ's development of nutrient numeric standards using a PowerPoint presentation. A copy of this presentation was provided to the NWG email list separately from this summary.

Question -Has EPA approved numeric standards in other states?
Answer - In April 2008, EPA approved a plan by the state of Wyoming for adopting standards by 2012-2014. In January of this year, EPA directed the state of Florida to adopt numeric nutrient standards for all surface waters, both fresh and estuarine, within 1 to 2 years.

Question - Is the EPA order in Florida in response to widespread and documented nutrient source problems?
Answer - Yes. I should note that Montana's proposed nutrient standards are aimed at problems in Montana and not at problems manifested in downstream states or associated with hypoxia in the Gulf of Mexico.

Question - Have you decided where and where not the standards would be?
Answer - The standards are generally applicable, but they will vary by level III and IV ecoregions. Our analysis indicates that about 75% of the variation in nutrient concentrations can be explained by ecoregion. The standards for wadeable streams will apply only in the summer, not year round.

Question - Are the ecoregions consistently useful for nitrogen and phosphorus?
Answer - They are somewhat better for nitrogen than phosphorus, but are applicable to both.

Question - Why does your chart of benthic algae biomass in the Clark Fork River show a decline of biomass with increasing phosphorus concentrations?
Answer - The error bars on the data mean that apparent decrease may not be real. If it is, it may be a function of reaching saturation and/or of sloughing of algae between measurements.

Comment - In the development of the Voluntary Nutrient Reduction Program (VNRP) for the Clark Fork in the early 1990s, we did not figure out why the chart shows the decline just described. It does demonstrate that we are dealing with a range of outcomes.

Question -Did public opinion survey of what constitutes undesirable algae levels in streams address the different types of algae?
Answer - Yes, the slides used in the survey included both diatomic and filament algae forms.

Question - Were peoples' perception that 150 mg of Chlorophyll a per square meter is a nuisance threshold the same across the state?
Answer - There was some variability within basins. We had expected a higher threshold in eastern Montana, but didn't find it. In no case did the public majority of one area of the state consider algae >150 mg Chl*a*/m^2 acceptable while the public majority in another area of the state considered it unacceptable; in all areas, the public majority found algae >150 mg Chl*a*/m^2 unacceptable. In the eastern prairie streams, the nutrient criteria are set to maintain dissolved oxygen levels at state standards to support fish and aquatic life rather than recreation.

Question - Have you connected the dots between recreation and dissolved oxygen?
Answer - Yes. See appendix A of my November 2008 report ("Scientific and Technical Basis…") that is out on the internet.

Question - In the Kootenai River won't increases in nutrient levels benefit the fishery?
Answer - Answer – Yes, nutrient increases may increase fish growth, and whole-stream fertilization studies show this, but at a certain point benthic algae levels will be reached that will adversely affect recreation.

Comment - Your definition of a reference stream is different than others that I have seen. Your definition appears to be circular because you pick only streams that do not have nuisance algae.
Response - By definition, reference streams meet their designated beneficial uses and are not significantly impacted by human activities. They generally do not have nuisance algae or dissolve oxygen problems. A reference steam could be impacted by natural processes such as a fire and we include data collected from such sites. In a reference stream, the occurrence of a nutrient-caused harm to use is infrequent.

Question - How do you address non-detect levels of nutrients?
Answer - Non-detect nutrient concentrations are set at 50% of the detection limit.

Question - Are sunlight and temperature levels addressed in the standards?

Answer - Yes they are addressed, because the standards for wadeable streams are applicable only during the growing season. We do not expect them to apply in winter (when it's cold and light levels are diminished) or during runoff; they are summertime, base-flow criteria, when the use impacts occur.

Question - Were sampling sites in the stratified random survey showing that most stream miles already meet the criteria generally located at the mouth of streams?
Answer - No, the sampling sites were determined randomly.

Question - Were sites downstream of sewage treatment plants included?
Answer - Yes, if such site had been randomly selected in advance for the stratified random sampling project. Roughly ninety percent of stream miles would comply with the criteria.

Question -Do you plan to use the model being developed in the Yellowstone River pilot study for other large rivers?
Answer - No, we do not. A different model will have to be developed for each large river. The same basic computer model could be used, but we would need to collect new data for the new river to be able to calibrate the model for that specific river.

Question - Will any streams have a year-round nutrient limit?
Answer - Streams with year-round limits would be steams feeding lakes or reservoirs, where year-round loading of nutrients is a concern.

Question - Will the tributaries to the Clark Fork River have the seasonal, three month nutrient standards?
Answer - Yes.

Question -In the eastern part of the state, will you look at nitrates rather than total nitrogen?
Answer - We will look at both. In agricultural areas in eastern Montana, nitrate levels in surface and ground water may be elevated. Ground water eventually impacts surface water. At the same time, the relationship we have so far demonstrated is between dissolved oxygen and total nitrogen (N), so we would want to propose a total N criterion too.

Question - Are you headed for identifying nitrate sources?
Answer - The reference streams will help us address this issue by identifying areas in which nutrients are elevated naturally.

Question - Do you intend to approach wadeable streams, lakes, and large rivers sequentially?
Answer - Yes. We are focusing now on wadeable streams. We will need an implementation strategy before we can take standards to the Board of Environmental Review for adoption into rules. We expect the work on implementation for wadeable stream standards to be relevant to the lakes and large rivers. Base standards and affordability criteria will go together.

Comment - Industries cannot exist in a state of non-compliance. Under the standards in the presentation, all point sources will be out of compliance. This will not be politically acceptable. There is not one right set of numbers for the nutrient standards; instead, there is a reasonable

range of numbers. Choosing within the range will have economic implications that should be assessed.
Response - We are developing standards on a harm-to-beneficial use basis, not incorporating economics in the criteria. The range of numbers for the standards resulting from our analysis will not solve the compliance issue. Affordability and limits of technology will be addressed through temporary variances that would be reviewed on a five year interval. If, after 20 years, standard compliance continues not to be practical due to affordability or technology, then we could change the water body's designated beneficial uses and allow higher levels of nutrients.

NWG Work Plan

Those NWG members and alternates present at this meeting agreed to the following topics for a framework for a work plan.

- The legal basis and obligations for nutrient standards;
- A detailed examination of the science underlying the standards, including the assumptions on which they are based;
- A plan to implement the standards including:
  - Temporary off-ramps, or variances, based on affordability and the limits of technology;
  - DEQ's analysis of alternatives when issuing permits; and
  - Economic impacts.
- Rule recommendations.

Mr. Mathieus and Mr. Mueller will work on more details for the work plan to propose to the NWG.

Public Comment

Comment - DEQ should consider establishing a web page on which meeting summaries, presentations and other documents related to nutrient standards can be posted.
Response by George Mathieus - This is a good idea, and we will look into implementing it.

Future Meeting

Future meetings were scheduled for the third Thursday of each month. The next meeting was scheduled for 9:00 to 3:00 p.m. on Thursday, June 18, 2009 in the DEQ Director's Conference room in the Metcalf Building in Helena. The agenda will include review of the revised draft of the ground rules and a presentation by the DEQ of the legal basis and obligations for nutrient standards.

Appendix 1
Unofficial Nutrient Work Group List
May 11, 2009

Members

Name	Interest	Organization	Alternate
Tim Burton	Municipal	City of Helena	John Rundqist, PE
John Wilson	Municipal	Town of Whitefish	
Dick Hoehne	Municipal	Town of Philipsburg	
Jim Jensen	Environmental	Montana Environmental Information Center	Kyla Wiens (MEIC)
Chris Brick	Environmental	Clark Fork Coalition	
Jim Edgcomb	Regulator of Affordability	Montana Department of Commerce	Kate Miller (DOC)
Scott Murphy	Wastewater Engineer	Morrison-Maierle Inc.	
Dave Aune	Wastewater Engineer	Great West Engineering	
Don Allen		Western Environmental Trade Association	
Don Quander	Oil and Gas	Holland & Hart	Dave Galt (Montana Petroleum Association
Debbie Shea	Mining	Montana Mining Association	Mike Mullaney (Holcim US)
Brian Sugden	Forestry	Plum Creek Timber	Ellen Simpson (Montana Wood Products Association)
John Youngberg	Agriculture	Montana Farm Bureau Federation	Jay Bodner (Montana Stock Growers Association)
Ryan Swinney	Real Estate/Developer	Bruce Swinney & Associates	Glenn Oppel (Montana Association of Realtors)
Terry McLaughlin	Manufacturing	Smurfit-Stone Container Corporation	Haley Beaudry (Columbia Falls Aluminum Co.)
Michael Perrodin	Railroad	BNSF Railway	Alan Stein (Olympus Technical Services, Inc.)
Jeff Tiberi	Conservation Districts	Montana Association of Conservation Districts	

Non-Voting Members

George Mathieus	DEQ Water Quality Planning Bureau
Todd Teegarden	DEQ Technical & Financial Assistance Bureau
Dr. Jeff Blend	DEQ Energy and Pollution Prevention Bureau
Dr. Michael Suplee	DEQ Water Quality Planning Bureau

Appendix 2
NWG Attendance List
May 11, 2009

Members	
Chris Brick	Clark Fork Coaliltion
Michael Perrodin	BNSF Railway
Tim Burton	City of Helena
Don Allen	Western Environmental Trade Association (WETA)
Brian Sugden	Plum Creek
Debbie Shea	Montana Mining Association
Terry McLaughlin	Smurfit-Stone Container
Donald Quander	Holland & Hart
Jeff Tiberi	Montana Association of Conservation Districts
Dick Hoehne	Town of Philipsburg
Alternate Members	
John Rundquist	City of Helena (Alternate for Tim Burton)
Dave Galt	Montana Petroleum Association (Alternate for Donald Quander)
Kate Miller	Montana Department of Commerce, Treasure State Endowment Program (DOC) (Alternate for Jim Edgcomb, DOC)
Kyla Wiens	Montana Environmental Information Center (MEIC) (Alternate for Jim Jenson, MEIC)
Alan Stine	Olympus Technical Services (Alternate for Michael Perrodin)
Jay Bodner	Montana Stockgrowers Association (Alternate for John Youngberg, Montana Farm Bureau)
Non-Voting Members	
George Mathieus	Department of Environmental Quality (DEQ), WQP Bureau Chief
Dr. Jeff Blend	DEQ, Energy Planning & Technical Assistance, Economist
Dr. Mike Suplee	DEQ, Water Quality Standards Section, Water Quality Specialist
Todd Teegarden	DEQ, Technical and Financial Assistance (TFA) Bureau Chief
Other Meeting Attendees	
Doug Parker	Hydrometrics
Bob Bukantis	DEQ, Water Quality Planning, Water Quality Standards Section Supervisor
Claudia Massman	DEQ Attorney
Steve Wade	Browning, Kaleczyc, Berry, and Hoven (BKBH)
Jessie Luther	BKBH
Dave Olson	Fidelity Exploration and Production
Ron Nissen	CHS Laurel Refinery
Dave Clark	H2R
Tina Laidlaw	US Environmental Protection Agency
Gerald Mueller	NWG Facilitator

Appendix 3

Ground Rules
Nutrient Working Group
May 11, 2009

1. Purpose

The purpose of the Nutrient Working Group (NWG) is to advise the Montana Department of Environmental Quality (DEQ) on the base numeric nutrient standards, the development of temporary nutrient criteria, and the implementation of those standards and criteria together with associated economic impacts.

2. Time Line

The NWG will function through *(?)*

3. Members

Members of the NWG will be designated by DEQ.

4. Decision Rule

4.1. The NWG will formulate recommendations by consensus, i.e., all members of the group must be able to live with the recommendations.

4.2 If a member cannot live with a proposed recommendation, she or he has a responsibility to explain why and offer an acceptable alternative.

4.3 Prior to final action on any recommendation, a draft version will be available for vetting by the organizations or agencies represented by group members.

5. NWG Process

5.1 NWG meetings are open to the public and will be publicly announced.

5.2 The facilitator shall draft an agenda and circulate it to the NWG via e-mail or no less than 5 days prior to the meeting.

5.3 The facilitator shall draft and circulate to the NWG a summary of group meetings.

5.4 The facilitator shall conduct meetings so that all members have an opportunity to speak to all agenda topics.

6. Committee Member Responsibilities

6.1 Each member agrees to either attend all meetings or to be represented by an alternate.

6.2 Each member agrees to consult regularly with the organizations or agencies he or she represents about the group's deliberations and bring back to the group the organization's or agency's concerns, ideas, and other feedback.

6.3 Each member agrees to listen carefully and respectfully to other members and to avoid interrupting other members.

6.4 Each member agrees to respect the decision of any member to withdraw at any time for any reason.

6.5. Each member agrees to explain to the other members the reason for withdrawal from the process.